cap **290** without contaminating portions of an associated penetrator. Cover **290** may be formed from various plastics and/or metals.

[**0122**] FIG. **18**B shows container **230** with penetrator assembly **240** disposed therein. One of the benefits of the present disclosure includes providing a kit which allows an operator to remove a driver from a holder contained within the kit using one hand. The other hand of the operator may remove container **230** from page two of divider **50** and open lid **232** of container **230** using one hand. Drive shaft **216** may be releasably engaged with receptacle **258** in end **251** of connector **250**.

[**0123**] FIG. **19** shows another example of a manual driver which may be used to insert an IO device into bone marrow in accordance with teachings of the present disclosure. Manual driver **200***b* may include pistol grip type handle **212***b* with drive shaft **216** extending therefrom. Manual driver **200***b* may also include an optional ratchet mechanism (not expressly shown). Manual driver **200***b* may be releasably engaged with penetrator assembly **240** or any other IO device incorporating teachings of the present disclosure.

[**0124**] Examples of acute and chronic conditions which may be treated using kits, intraosseous devices, intravenous devices and procedures incorporating teachings of the present disclosure include, but are not limited to, the following:

[**0125**] Anaphylaxis (epinephrine, steroids, antihistamines, fluids, and life support)

[**0126**] Arrhythmia (anti-arrhythmics, electrolyte balance, life support);

[**0127**] Burns (fluid replacement, antibiotics, morphine for pain control);

[**0128**] Cardiac arrest (epinephrine, atropine, amiodarone, calcium, xylocalne, magnesium);

[**0129**] Congestive heart failure (life support, diuretics, morphine, nitroglycerin);

[**0130**] Dehydration (emergency port for life support, antibiotics, blood, electrolytes);

[**0131**] Diabetic Ketoacidosis (life support, electrolyte control, fluid replacement);

[**0132**] Dialysis (emergency port for life support, antibiotics, blood, electrolytes);

[**0133**] Drug overdose (naloxone, life support, electrolyte correction);

[**0134**] Emphysema (life support, beta adrenergics, steroids);

[**0135**] Hemophiliacs (life support, blood, fibrin products, analgesics);

[**0136**] Osteomyelitis (antibiotics directly into the site of infection, analgesics);

[**0137**] Pediatric applications (shock, dehydration, nutrition, electrolyte correction);

[**0138**] Seizures (anti-seizure medications, life support, fluid balance);

[**0139**] Shock (life support fluids, pressor agents, antibiotics, steroids);

[**0140**] Sickle cell crisis (fluid, morphine for pain, blood, antibiotics);

[**0141**] Trauma (emergency port for life support fluids, antibiotics, blood, electrolytes);

[**0142**] More than 35,000 Advanced Cardiac Life Support (ACLS) ambulances are in service in the U.S. Each is equipped with emergency drugs and devices. Most are required to carry intraosseous needles and paramedics are trained in their use for pediatric emergencies. Kits incorporating teachings of the present disclosure may be used to administer medications and treats before permanent damage to a patient occurs.

[**0143**] More than 4,000 emergency rooms in the U.S. are required to treat life-threatening emergencies like shock trauma and cardiac arrest. ERs are stocked with the latest devices and equipment to help patients receive state-of-the-art treatment. However, there is no more exasperating situation for the physician or potentially catastrophic condition for the critical patient, than the inability to establish intravenous access. Kits with IO devices incorporating teachings of the present disclosure may provide a simple and straightforward solution for extremely difficult clinical problems.

[**0144**] Hospitals are required to provide crash carts on every patient ward. It is estimated that 6,000 U.S. hospitals stock more than 60,000 crash carts. These crash carts are stocked with defibrillators, IV access devices, including central venous catheters, IV fluids and drugs for common emergencies. Nurses and other healthcare workers using these crash carts are often inexperienced in such emergencies and have difficulty establishing IV access. A kit with IO devices incorporating teachings of the present disclosure may provide the long sought IV alternative for difficult patients.

[**0145**] Automatic injectors are widely used in the military. During Desert Storm, combat soldiers carried an atropine auto-injector for nerve gas poisoning. Current auto-injectors are limited to intramuscular injections. The Kits with IO devices may vastly expand the scope of treatment to include intravenous drugs, without having to be skilled in the technique of intravenous insertion.

[**0146**] Most acute care hospitals in the U.S. operate Intensive Care Units (ICUs) for seriously ill patients. Establishing and maintaining venous access in these patients is often a challenge. IO access may be a welcome procedure for administration of drugs and fluids to these critical patients.

[**0147**] Ten percent of the population experience a major seizure in their lifetime and more than 2,500,000 people in the United States have epilepsy. Grand mal seizures represent one of the most dramatic events in medicine. During the seizure, which usually lasts 60 to 90 seconds, patients typically fall to the ground, become rigid with trunk and extremities extended, and shake violently. The most dreaded progression of seizures is status epilepticus, a condition defined as a continuous seizure lasting more than 30 minutes or two or more seizures that occur without full conscious recovery between attacks. Convulsive status epilepticus requires urgent, immediate treatment. Patients are at risk for serious injury, hypoxemia, circulatory collapse, permanent